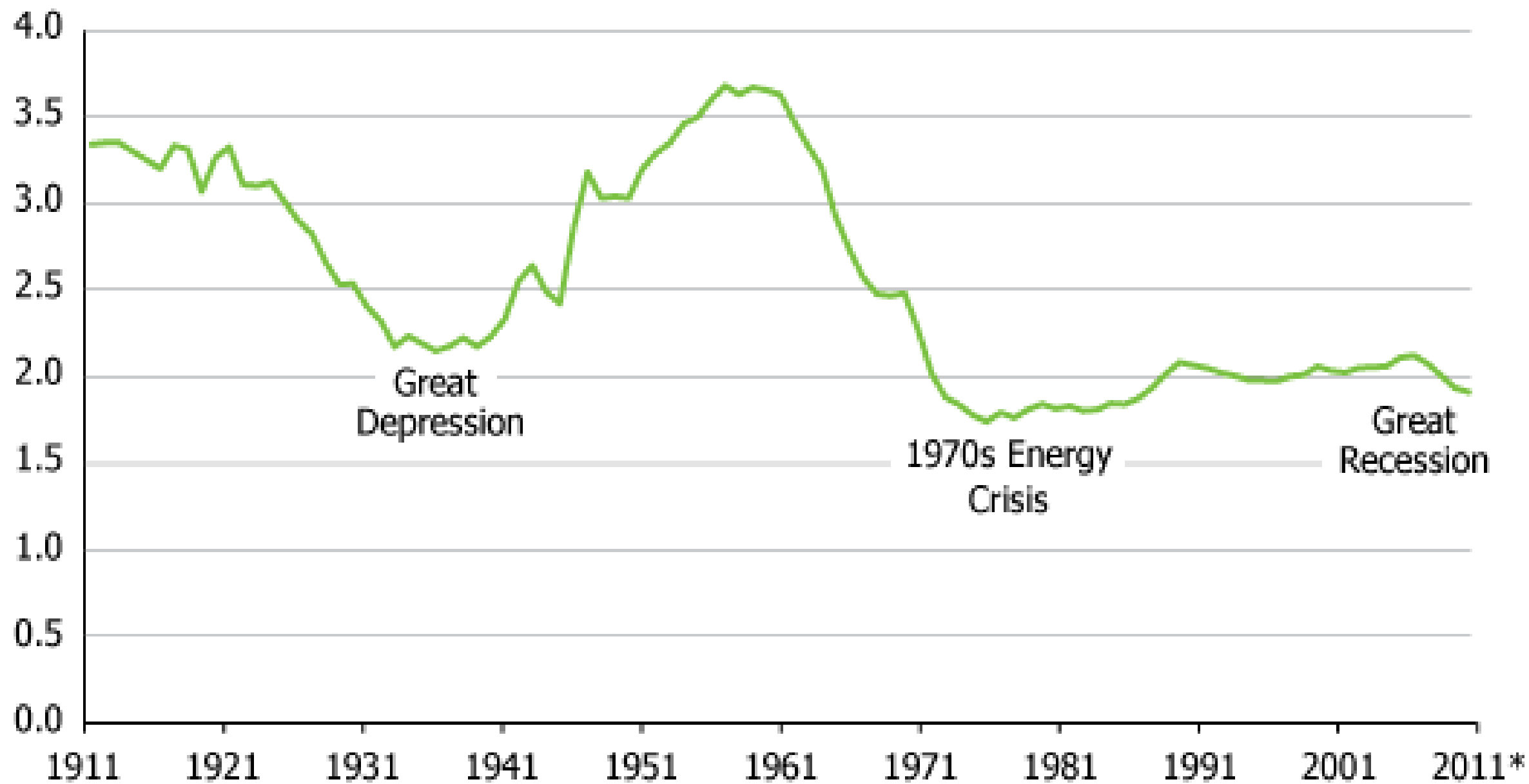


# Fertility Assumptions

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Number of Children per Woman



# My recommendation, overview

- The TFR is likely to remain within a narrow band of 1.8 to 2.0. This is consistent with the past 40 years, with a low of 1.7 in 1976 and a high of 2.1 in several years.
- In the unlikely event that the TFR moves outside this band, our expectation is that a shift to lower levels is more plausible, specifically rapid downward movement of the TFR to 1.5 – a change with significant implications for the OASDI SYSTEM

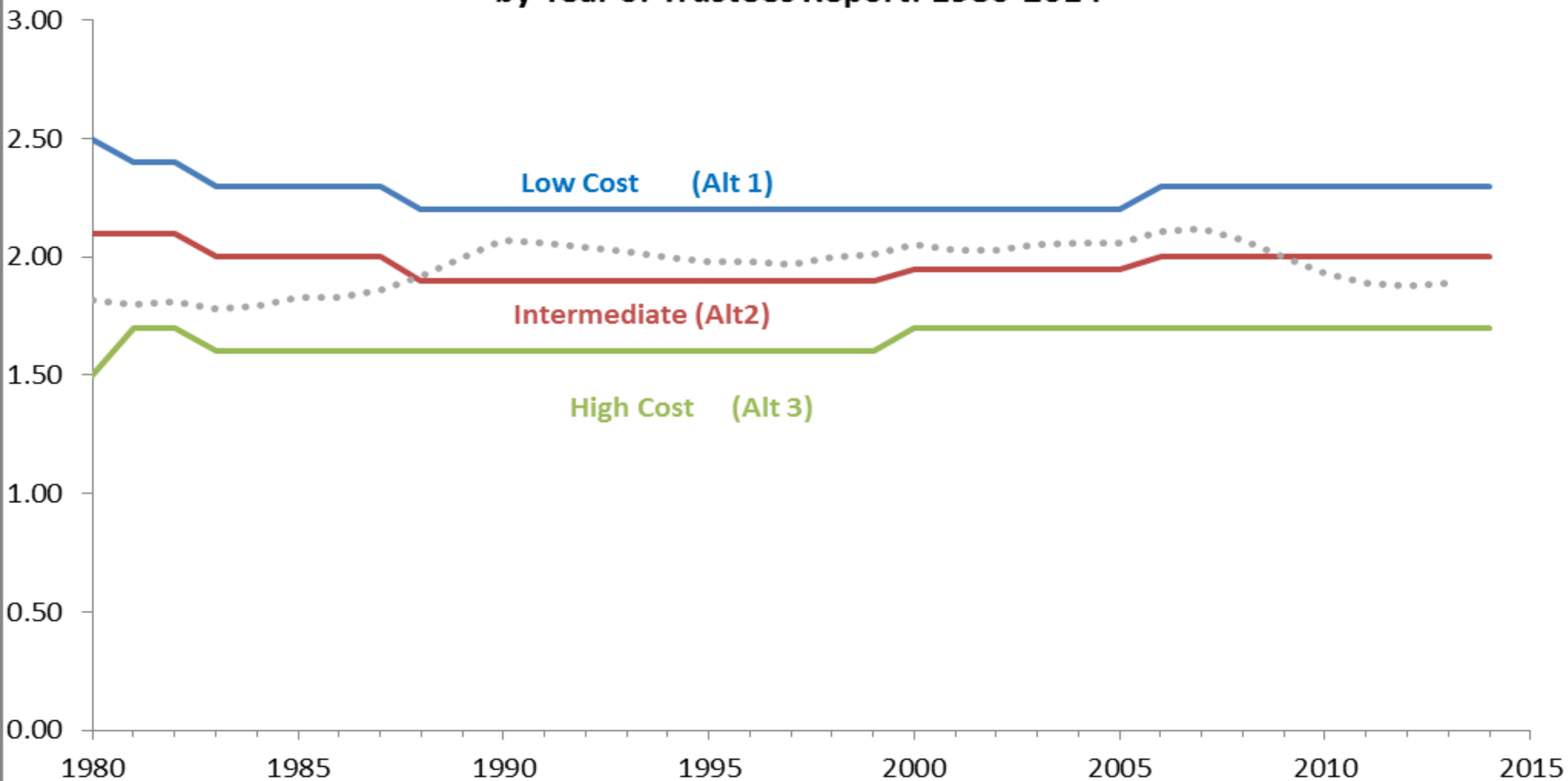
# My recommendation, more specifically

- Intermediate: TFR rises to 1.9 by 2025 and stays there.
  - High: TFR rises to 2.10 by 2025 and stays there
  - Low: TFR declines to 1.50 by 2025 and stays there.
- 
- Note the asymmetry. A considerable drop is more likely than a considerable increase; and a considerable drop carries more risk for the fiscal health of the system.
  - Note the rapidity of change with attendant system implications

# Assumptions in the 2014 Annual Report

- Intermediate: TFR rises to 2.07 by 2021, then falls to 2.00 by 2038 and stays there.
- High: TFR rises to 2.30 by 2038 and stays there
- Low: TFR declines to 1.70 by 2038 and stays there.
  
- 2 components at issue: level and date reaching that level.

# Ultimate Total Fertility Rate Assumptions, by Year of Trustees Report: 1980-2014



# History of Panel fertility recommendations

- 1991            2.2     1.9     1.4
- 1995           2.2     1.95    1.6
- 1999                   1.9
- 2003           2.2     1.95    1.7
- 2007           2.1     2.0     1.5
- 2011           2.2     2.0     1.6
- Notes: in 1991, Finis Welch dissented, wanted an intermediate=1.7
- 2003 noted that some demographers recommended a low=1.5
- 2011 noted postponement during recession with recuperation to follow

- Given recent fertility trends (2010-2013 TFRs=1.9) it seems prudent to move the intermediate assumption back to 1.9.
- The expected recuperation seems unlikely. (Evidence on business cycles → fertility timing is suggestive; but short-term & slight timing fluctuations likely have little system-wide effect. Might want to run some scenarios to see the effect of short-term timing swings.)
- Sticking with the current assumptions is probably not a big deal.
- What is a bigger deal is having the high at 2.3 and the low at only 1.7. No panel ever recommended a high of 2.3 & all but one panel recommended a low below 1.7.



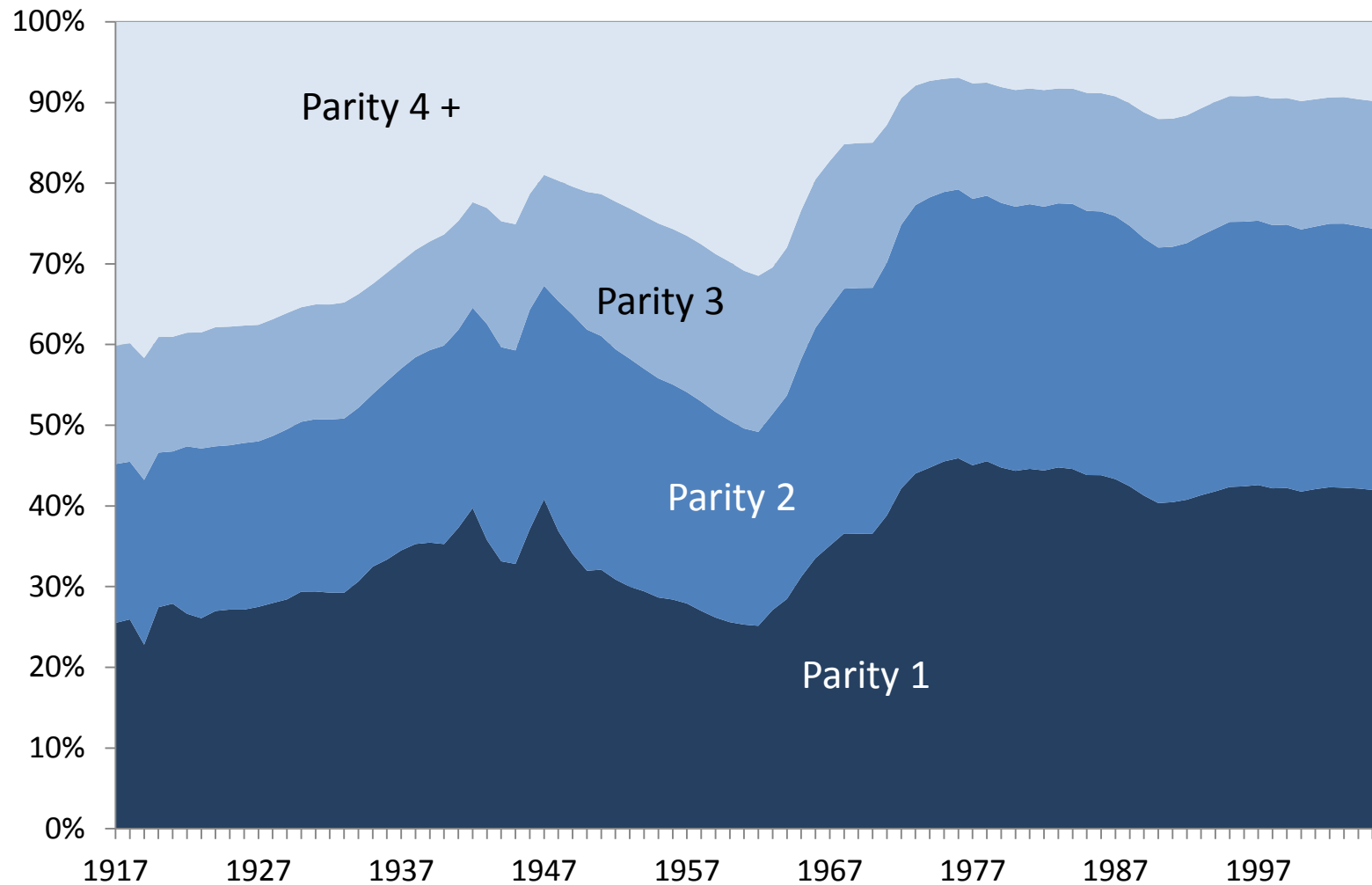
# Consider how a change in fertility likely affects the trust fund calculations.

- We'll consider an increase in fertility; the opposite for a decrease.
- Short-term (~0-20 yrs): little effect. Maybe some increase in child beneficiaries. Maybe fewer mothers in the labor force (if such feedbacks are in the model)
- Medium-term (~20-65yrs): Significant increase in the size of the labor force (depending on the size/duration of the fertility increase)
- Long term (~65+ yrs): Significant increase in number of beneficiaries.

# 71% of all births are first or second births

- 2013 (Trend in next slide)
  - 1<sup>st</sup> births = 39%
  - 2<sup>nd</sup> births = 32%
  - 3<sup>rd</sup> births = 17%
  - 4<sup>th</sup> births = 12%
- 
- Are we likely to see a substantial increase in 3<sup>rd</sup> and higher order births? (Trend in next slide)

## Percent of births by parity: United States 1917-2006

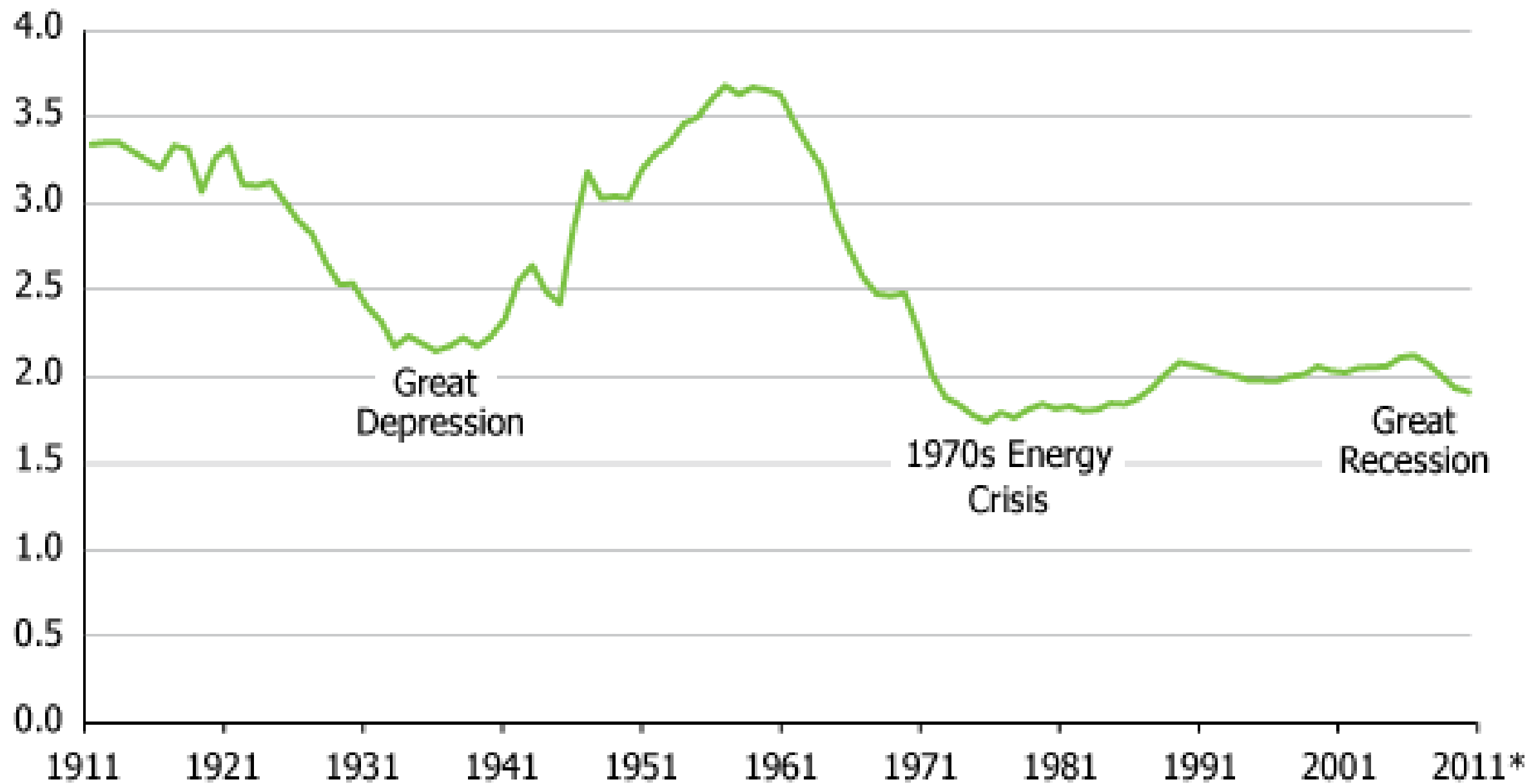


Source: 2011 Technical Panel report (Figure 19), Human Fertility Database

# TFR: A period measure

- Tempo & quantum components
- An intuitive illustration
- Tempo changes were the biggest component of the Baby Boom. Ryder (1980) estimates 58% of the 1936-1957 increase due to younger ages at childbearing and 55% of the 1957-1972 decrease due to older childbearing ages.
- Clearly these timing changes had large effects on the Trust Fund.

Number of Children per Woman



# We now have a substantially later fertility curve

• Year:	1973	2013
• TFR	1.88	1.86
• Age & ASFRs		
• 15-19	59	26
• 20-24	120	81
• 25-29	112	106
• 30-34	56	98
• 35-39	22	49
• 40-44	5	10

# Fundamental shifts in past 40 years → Fertility postponement

- Increase in educational attainment, proportionally greater for women (delays parenthood & increases cost of children)
  - Increase in female labor force participation, and not just for \$
  - Increase in “female” jobs relative to “male” jobs
  - Increase in precarious jobs; decline in power of unions; globalization
  - Attitudinal shift re child care
- 
- Are any of these likely to be reversed?
  - Anything on the horizon likely to lead to younger ages at childbearing?
  - More postponement? Quantum implications given fecundity age schedule

# Where are other countries

- Countries included in the comparison: All that have a population 2 million +, TFR <2.0 in 1995 and GDP >\$7,000
- Since it takes about a generation for behavior and institutions to settle into a stable pattern, countries created from the breakup of the former Soviet Union and Yugoslavia are excluded.



## Other countries, cont.

- Since about 2002-2003, all but one are either above 1.75 or below 1.50. The exception is Canada (Quebec's new policies)
- So why would we pick a number for low fertility that is in a space not occupied by other countries?

## Other countries, cont.

- New Zealand is the highest at about 2.1
- So why would we pick a high of 2.3?
- The last time we had a TFR = or above 2.3 was 1971 (rounded up from 2.27). It is likely that we will go back to the fundamentals in place in 1971? Or that something will happen that makes women want to have children at younger & younger ages?

# TFR changes tend to be rapid

- 1945=2.5    1955=3.6    peaked 1957 at 3.8
- 1960=3.7    1970=2.5    1974=1.8
- Waiting 24 years to get from TFR=2.3 or 1.7 just seems inappropriate given the historical record.

# Again, my recommendations

- Intermediate: TFR rises to 1.9 by 2025 and stays there.
- High: TFR rises to 2.10 by 2025 and stays there
- Low: TFR declines to 1.50 by 2025 and stays there.